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ABSTRACT

This project opens a conversation about the use of discourse as the basis for encouraging students' mathematical thinking in classrooms and supporting professional growth. A collaboration of teacher practitioners and Math Forum staff, it reflects an attempt to integrate practice and research, reporting on findings culled from discussions of research articles and chapters, classroom practice, and videotapes of classroom teaching. Each of the teacher participants worked with his or her students on the cylinder problem, a non-routine challenge problem providing the opportunity for rich discourse and reflection upon its use. Links between these findings and the research on student learning and instruction are noted. Discussion focuses on the specific strategies that are used to help students become engaged in inquiry and take more responsibility and initiative in their learning. Video clips from the teachers' classrooms illustrate the interventions discussed. The challenge problem and lessons for elementary, middle school, and high school classrooms are detailed, and a corresponding set of student predictions is presented. Finally, participants' reflections on their participation in this project are summarized. (Contains 36 references.) (Author/ASK)

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